



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, CA 94105-3901

APR 07 2016

Tom Howard, Executive Director  
State Water Resources Control Board  
P.O. Box 100  
Sacramento, California 95812-0100

Dear Mr. Howard:

The U.S. Environmental Protection Agency (EPA) has completed a review of the amendment to the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) and approves the non-substantive changes to the Water Quality Objectives (Sections II.B. and II.E.) and the Receiving Water Limitation for Salinity (Section III.M.3) as revised water quality standards.

The State Water Resources Control Board (State Board) adopted the Ocean Plan amendment on May 6, 2015 under Resolution No. R5-2015-0033. The California Office of Administrative Law (OAL) approved the amendment on January 28, 2016. EPA received the State Board's request for approval on January 8, 2016, and OAL's approval letter on January 28, 2016. EPA is approving the actions concerning the designated beneficial use and the water quality objectives in the Basin Plan amendment as water quality standards pursuant to section 303(c) of the Clean Water Act (CWA) and its implementing regulations at 40 CFR Part 131.

**Today's Action**

Section 303(c) of the CWA requires EPA to approve or disapprove new or revised State-adopted water quality standards. The State regulatory provisions that are subject to EPA's approval authority under CWA section 303(c) are those addressing antidegradation, designated uses, water quality criteria, and certain provisions addressing implementation of water quality standards for surface waters.

EPA has determined that the elements of the Receiving Water Limitation for Salinity (Section III.M.3) are subject to EPA's CWA section 303(c) approval authority. These include the receiving water limitation for salinity (Section 3.b.(1)), the procedure by which Regional Boards can approve facility-specific alternative receiving water limitations (Section 3.c), the allowance for an alternate mixing zone for a specific class of dischargers (Section 3.d), and the extension of the State's compliance schedule policy to desalination facilities (Section 3.f). EPA has reviewed the Ocean Plan amendment and has concluded these water quality standards in the Ocean Plan amendment are consistent with the requirements of the CWA and EPA's regulations at 40 CFR Parts 131.5 and 131.6.

## **Public Participation**

EPA acknowledges the State on its efforts to include the public in the development and review of the Ocean Plan desalination amendment. On March 20, 2015, the State Board publicly noticed the opportunity to provide written comments on the Ocean Plan desalination amendments by April 9, 2015. The State Board took public testimony during its hearing on the Ocean Plan amendment on May 5, 2015 and approved the amendments on May 6, 2015. Based upon our review, EPA has concluded that the public review procedures followed by the State in State Board Resolution No. 2015-0033 were consistent with the procedural requirements for public participation in triennial reviews, adoption, and revisions of state water quality standards.

## **The Endangered Species Act (ESA)**

Section 7(a)(2) of the Endangered Species Act states that each federal agency shall ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered or threatened species (listed species) or result in the destruction or adverse modification of critical habitat. The desalination activities are not likely to adversely affect threatened or endangered species or critical habitat. In February 2016, EPA initiated consultation with the National Marine Fisheries Service (NMFS) and will continue to consult with NMFS on this action. We anticipate concluding consultation in the near future. Consistent with ESA section 7(d), EPA finds that our approval will not result in any irreversible or irretrievable commitment of resources or foreclose the formulation or implementation of any reasonable and prudent alternative measures to minimize any potential effects to threatened or endangered species.

EPA commends the State Board staff for its excellent work concerning the desalination amendment. If there are any questions regarding our approval action, please contact me at (415) 972-3337, or Terry Fleming of my staff at (415) 972-3462. As always, EPA looks forward to continued cooperation with the State Board in achieving our mutual environmental goals.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tomás Torres', with a long horizontal line extending to the right.

Tomás Torres  
Director, Water Division

Enclosure

cc: Maria de la Paz Carpio-Obeso, SWRCB  
Rik Rasmussen, SWRCB

**Enclosure.** The underlined and italicized sections of Section II and III are water quality standards subject to EPA approval

## II. WATER QUALITY OBJECTIVES

### B. Bacterial Characteristics

(2) The “Initial\* Dilution\* Zone” of wastewater outfalls shall be excluded from designation as “kelp\* beds\*” for purposes of bacterial standards, and Regional Boards should recommend extension of such exclusion zone where warranted to the State Water Board (for consideration under Chapter III.J.). Adventitious assemblages of kelp plants on waste discharge structures (e.g., outfall pipes and multiport diffusers\*) do not constitute kelp\* beds\* for purposes of bacterial standards.

### E. Biological Characteristics

1. Marine communities, including vertebrate, invertebrate, algae, and plant species, shall not be degraded\*.\*

## III. PROGRAM OF IMPLEMENTATION

### 3. Receiving Water Limitation for Salinity\*

a. Chapter III.M.3 is applicable to all desalination facilities discharging brine\* into ocean waters,\* including facilities that commingle brine\* and wastewater.

*b. The receiving water limitation for salinity\* shall be established as described below:*

*(1) Discharges shall not exceed a daily maximum of 2.0 parts per thousand (ppt) above natural background salinity\* measured no further than 100 meters (328 ft) horizontally from each discharge point. There is no vertical limit to this zone.*

(2) In determining an effluent limit necessary to meet this receiving water limitation, permit writers shall use the formula in chapter III.C.4 that has been modified for brine\* discharges as follows:

Equation 1:  $C_e = C_o + D_m(2.0 \text{ ppt})$   
 $C_e = (2.0 \text{ ppt} + C_s) + D_m(2.0 \text{ ppt})$

Where:

$C_e$  = the effluent concentration limit, ppt

$C_o$  = the salinity concentration to be met at the completion of initial dilution = 2.0 ppt +

$C_s$

$C_s$  = the natural background salinity,\* ppt

$D_m$  = minimum probable initial dilution\* expressed as parts seawater\* per part brine\* discharge

(a) The fixed distance referenced in the initial dilution\* definition shall be no more than 100 meters (328 feet).

(b) In addition, the owner or operator shall develop a dilution factor ( $D_m$ ) based on the distance of 100 meters (328 feet) or initial dilution,\* whichever is smaller. The dilution factor ( $D_m$ ) shall be developed within the brine mixing zone\* using applicable water quality models that have been approved by the regional water boards in consultation with State Water Board staff.

(c) The value 2.0 ppt in Equation 1 is the maximum incremental increase above natural background salinity\* ( $C_s$ ) allowed at the edge of the brine mixing zone.\* A regional water board may substitute an

alternative numeric value for 2.0 ppt in Equation 1 based upon the results of a facility-specific alternative salinity\* receiving water limitation study, as described in chapter III.M.3.c below.

c. An owner or operator may submit a proposal to the regional water board for approval of an alternative (other than 2 ppt) salinity\* receiving water limitation to be met no further than 100 meters horizontally from the discharge. There is no vertical limit to this zone.

(1) To determine whether a proposed facility-specific alternative receiving water limitation is adequately protective of beneficial uses, an owner or operator shall:

(a) Establish baseline biological conditions at the discharge location and at reference locations over a 12-month period prior to commencing brine\* discharge. The biologic surveys must characterize the ecologic composition of habitat and marine life using measures established by the regional water board. At their discretion, the regional water boards may permit the use of existing data to meet this requirement.

(b) Conduct at least the following chronic toxicity\* Whole Effluent Toxicity (WET) tests: germination and growth for giant kelp (*Macrocystis pyrifera*); development for red abalone (*Haliotis refescens*); development and fertilization for purple urchin (*Strongylocentrotus purpuratus*); development and fertilization for sand dollar (*Dendraster excentricus*); larval growth rate for topsmelt (*Atherniops affinis*). WET tests shall be performed by an Environmental Laboratory Accreditation Program (ELAP) certified laboratory.

(c) The regional water board in consultation with State Water Board staff may require an owner or operator to do additional toxicity studies if needed.

(2) The regional water board in consultation with the State Water Board staff may require an owner or operator to provide additional studies or information in order to approve a facility-specific alternative receiving water limitation for salinity.\*

(3) The facility-specific alternative receiving water limitation shall be based on the lowest observed effect concentration (LOEC)\* for the most sensitive species and toxicity endpoint as determined in the chronic toxicity\* studies. The regional water board in consultation with State Water Board staff has discretion to approve the proposed facility-specific alternative receiving water limitation for salinity.\*

(4) The regional water board shall review a facility's monitoring data, the studies as required in chapter III.M.4 below, or any other information that the regional water board deems to be relevant to periodically assess whether the facility-specific alternative receiving water limitation for salinity\* is adequately protective of beneficial uses. The regional water board may eliminate or revise a facility-specific alternative receiving water limitation for salinity\* based on its assessment of the data.

d. The owner or operator of a facility that has received a conditional Water Code section 13142.5(b) determination and is over 80 percent constructed by [the effective date of this plan] that proposes flow augmentation\* using a surface water intake may submit a proposal to the regional water board in consultation with the State Water Board staff for approval of an alternative brine mixing zone\* not to exceed 200 meters laterally from the discharge point and throughout the water column. The owner or operator of such a facility must demonstrate, in accordance with chapter III.M.2.d.(2)(c), that the combination of the alternative brine mixing zone\* and flow augmentation\* using a surface water intake provide a comparable level of intake and mortality of all forms of marine life\* as the

combination of the standard brine mixing zone\* and wastewater dilution if wastewater is available, or multiport diffusers\* if wastewater is unavailable. In addition to the analysis of the effects required by chapter III.M.2.d.(2)(c), the owner or operator must also evaluate the individual and cumulative effects of the alternative brine mixing zone\* on the intake and mortality of all forms of marine life.\* In no case may the discharge result in hypoxic conditions outside of the alternative brine mixing zone.\* If an alternative brine mixing zone\* is approved, the alternative distance and the areal extent of the alternative brine mixing zone\* shall be used in lieu of the standard brine mixing zone\* for all purposes, including establishing an effluent limitation and a receiving water limitation for salinity, in chapter III.M.

e. Existing facilities that do not meet the receiving water limitation at the edge of the brine mixing zone\* and throughout the water column by [the effective date of this plan] must either: 1) establish a facility-specific alternative receiving water limitation for salinity\* as described in chapter III.M.3.c; or, 2) upgrade the facility's brine\* discharge method in order to meet the receiving water limitation in chapter III.M.3.b in accordance with the State Water Board's Compliance Schedule Policy, as set forth in chapter III.M.3.f below. An owner or operator that chooses to upgrade the facility's method of brine\* discharge:

(1) Must demonstrate to the regional water board that the brine\* discharge does not negatively impact sensitive habitats,\* sensitive species, MPAs, or SWQPAs.\*

(2) Is subject to the Considerations for Brine\* Discharge Technology described in chapter III.M.2.d.(2).

f. The regional water board may grant compliance schedules for the requirements for brine\* waste discharges for desalination facilities.\* All compliance schedules shall be in accordance with the State Water Board's Compliance Schedule Policy, except that the salinity\* receiving water limitation set forth in chapters III.M.3.b and III.M.3.c shall be considered to be a "new water quality objective" as used in the Compliance Schedule Policy.

g. The regional water board in consultation with the State Water Board staff may require an owner or operator to provide additional studies or information if needed. All studies and models are subject to the approval of the regional water board in consultation with State Water Board staff. The regional water board may require an owner or operator to hire a neutral third party entity to review studies and models and make recommendations to the regional water board.